Watershed

Data Fluency for Dummies

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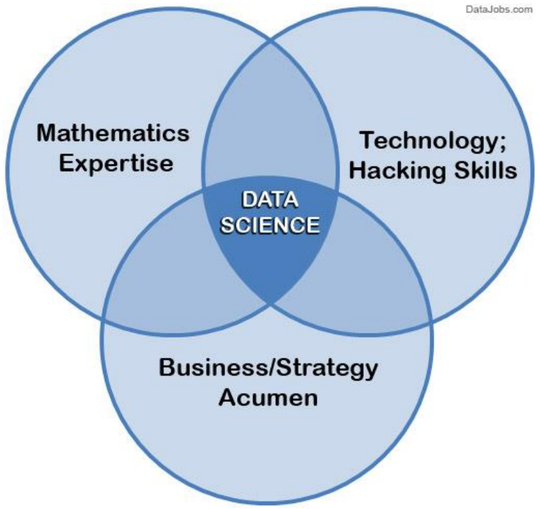
What is Data Science?

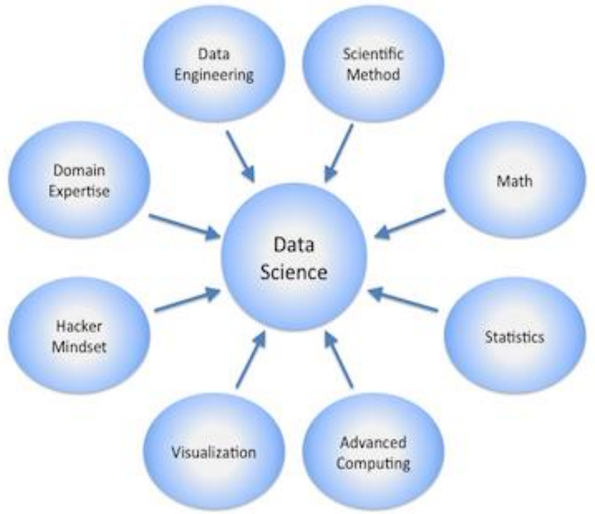
Why is it so confusing in the first place?

- Hype cycle
- VCs and startups!
- A catchall for a fast-growing set of competencies

Common definitions of data science

One way to consider data science is as an evolutionary step in interdisciplinary fields—such as business analysis that incorporate computer science, modeling, statistics, analytics, and mathematics. - NYU





Source: Calvin Andrus

A Broad Field

Data Scientists are people with some mix of coding and statistical skills who work on making data useful in various ways.

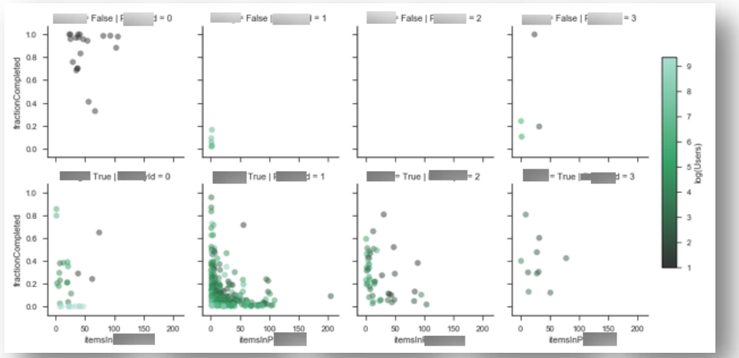
Type A Data Scientist: Analysis

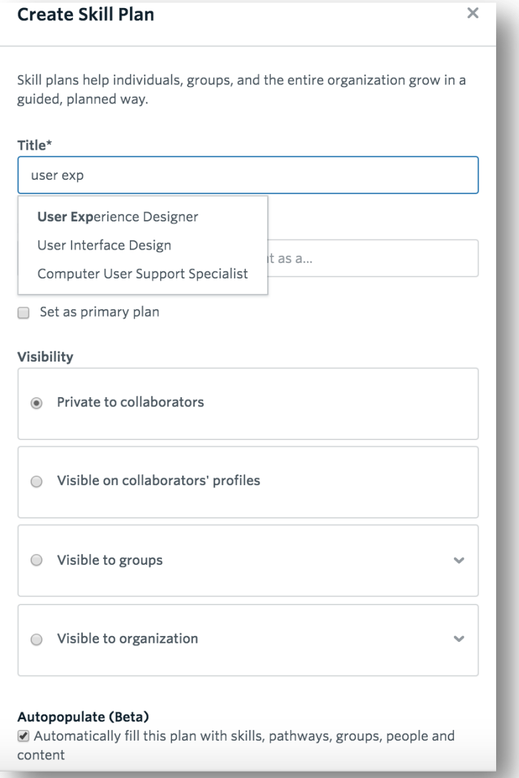
These scientists are concerned primarily with making sense of data or working with it in a fairly static way.

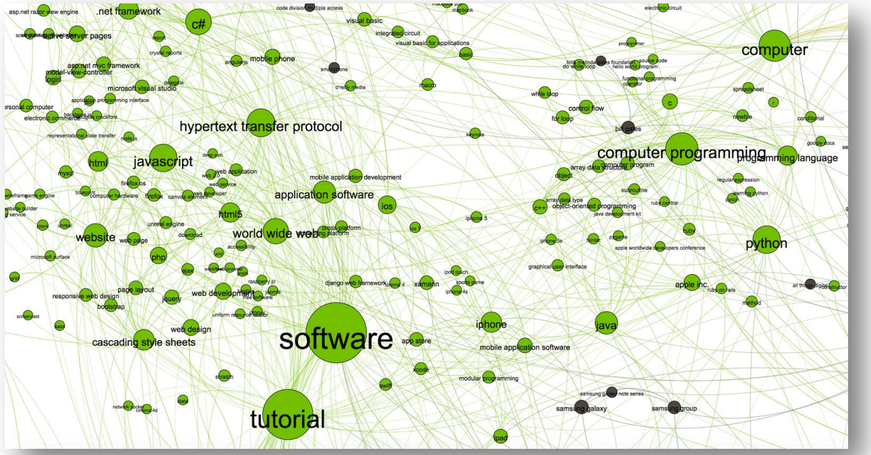
Type B Data Scientist: Building

These scientists have some statistical background, are very strong coders, and may be trained software engineers.

Stuff that data scientists actually do







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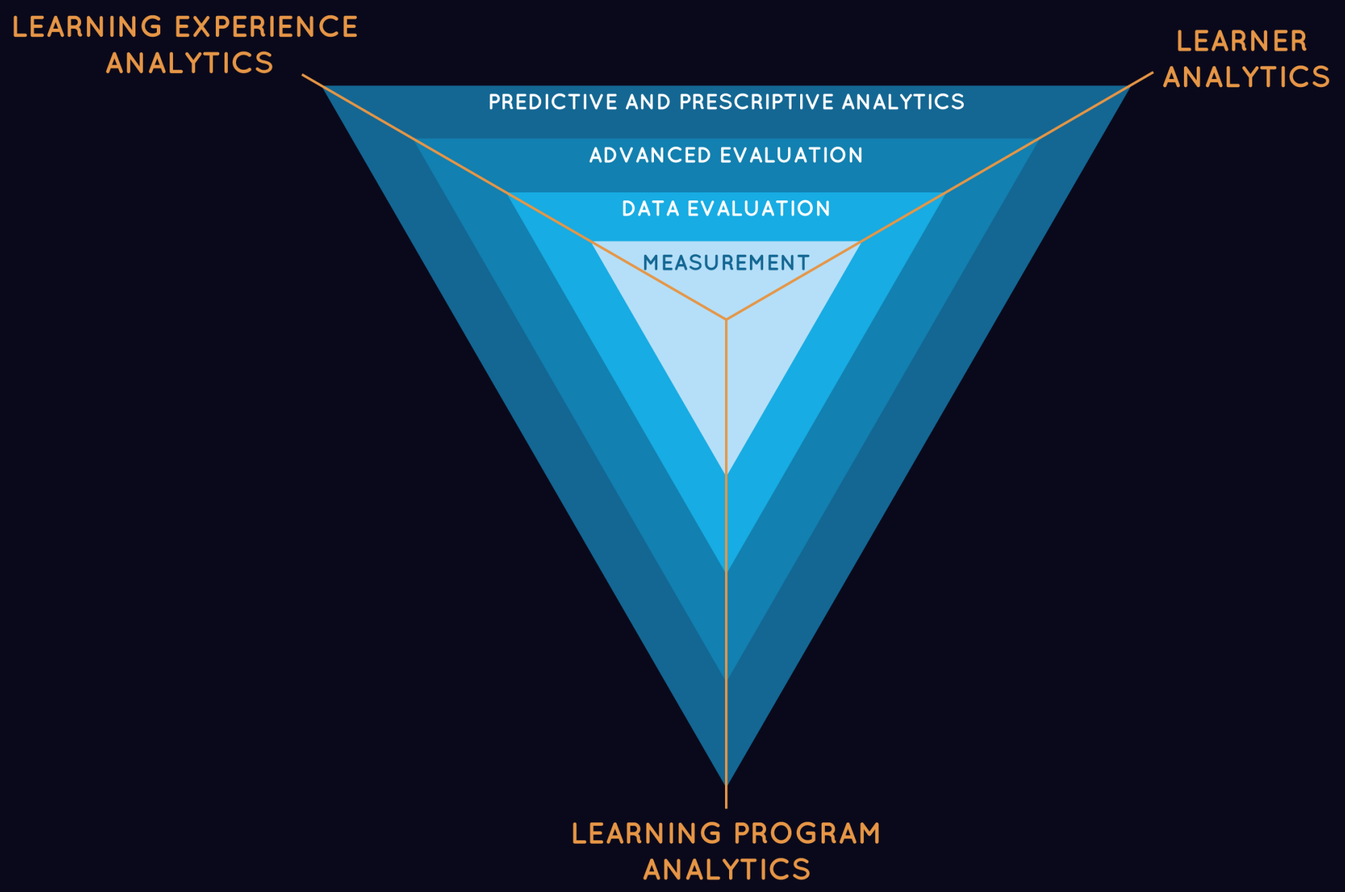
How does data fit into learning?

Learning Analytics



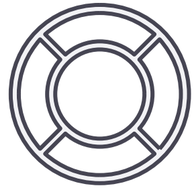
Understanding Learning Analytics: Categories

Learning Experience

Understand more about a specific learning activity. Maximize effectiveness and spot problems.

Learner

Understand a learner or group of learners. Ensure organizational readiness and compliance.



Learning Program

Understand an overall learning program. Is this initiative helping to meet business objectives?

Understanding Learning Analytics: Complexity

MEASUREMENT

What are people doing?

How are people interacting with your learning content?

How are they performing?

EVALUATION

Is that good or bad?

How are people, resources, and programs performing against benchmarks?

Are they better or worse than they were before?

ADVANCED EVALUATION

Why?

What are the reasons for good and bad performance?

What's different about your most successful people, resources, and programs?

PREDICTIVE & PRESCRIPTIVE

What would happen if I do X?

Based on your data, can you predict what a successful person, resource, or program will look like?

What do you need to do differently?

EXAMPLE: Complexity in Learning Experience

MEASUREMENT

What are people doing?

Each month, our people watch an average of 2,764 videos of less than 3 minutes in length.

EVALUATION

Is that good or bad?

Videos under 3 minutes receive 50% more views than videos longer than 3 minutes.

ADVANCED EVALUATION

Why?

Videos longer than 3 minutes are too long; people are dropping out before completing, and people are less likely to even start.

PREDICTIVE & PRESCRIPTIVE

What would happen if…

If we reduce the length of longer videos to under 3 minutes, we can increase completion rates by at least 50%.

Link learning design to measurement

Learning Design

Business goal	What do people need to do?	What do people need to learn?	What training is required?
Was the goal achieved?	Are people doing that?	Have they learned it?	Did they complete it?

Measurement

What's it look like in the real world?

Key Metrics

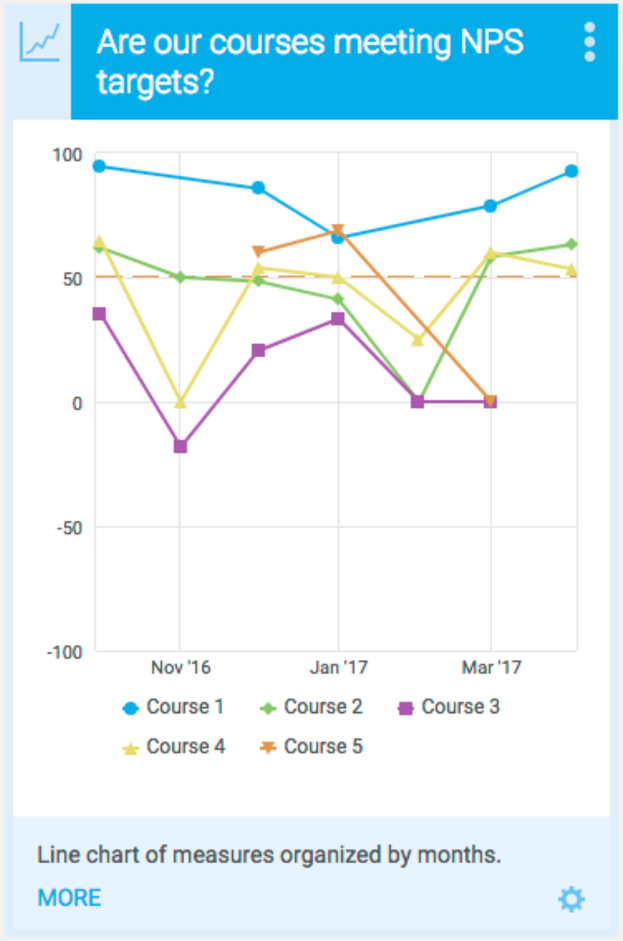
Time to
chest

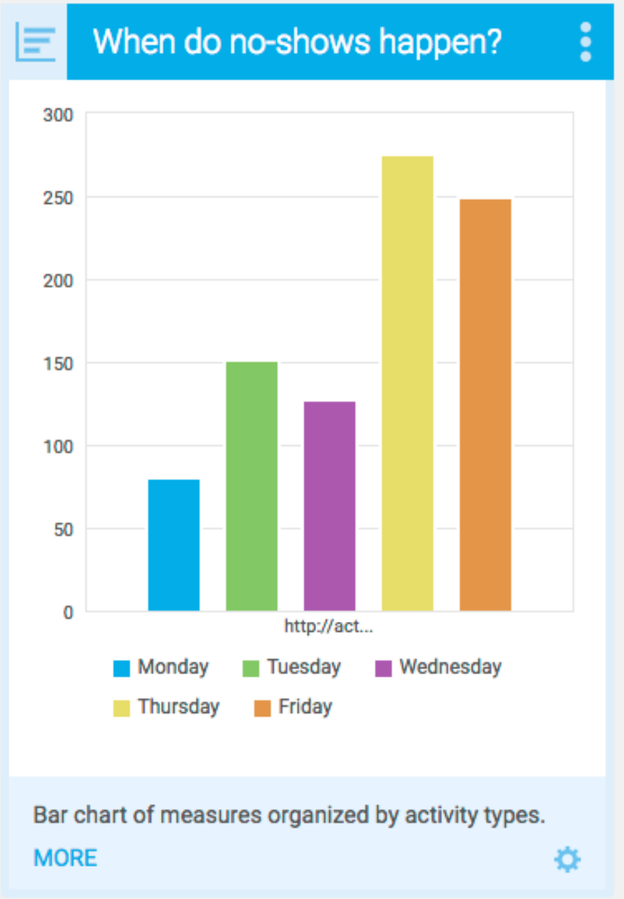
Time to
defibrillation

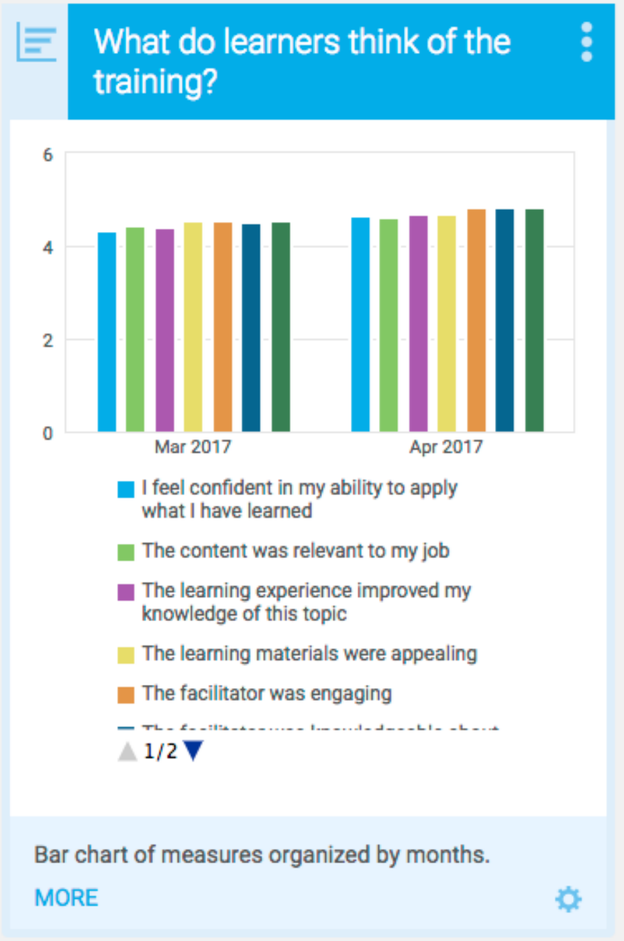
Time to
first drug

What is the time to chest?	What is the time to defibrillation?	What is the time to first drug?
Was time to chest under 90 seconds?	Was time to defib under 180 seconds?	Was time to first drug under 120 seconds?
Why or why not?	Why or why not?	Why or why not?
What happens when we change X?	What happens when we change X?	What happens when we change X?

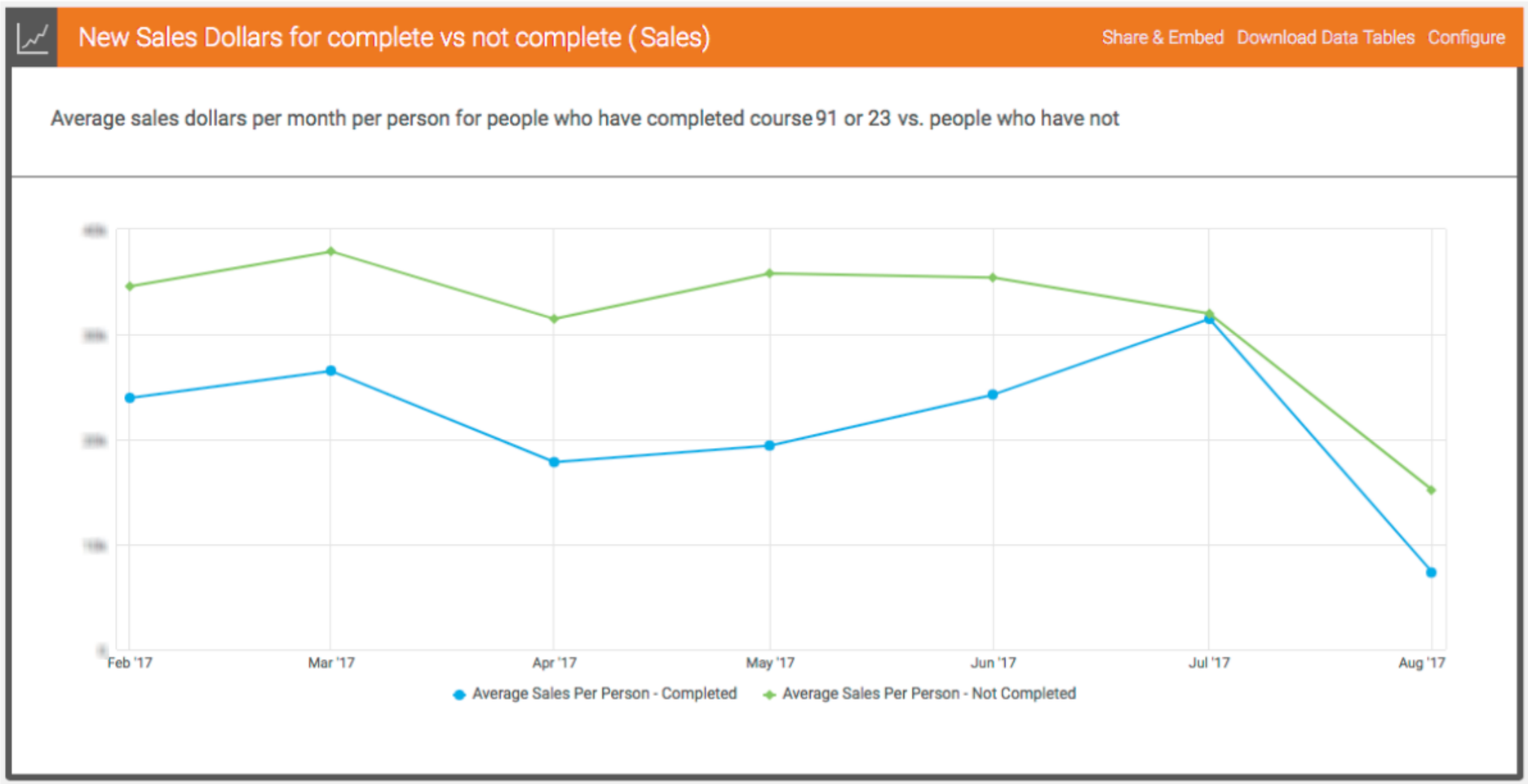
Applying Benchmarks and Investigating Issues







How does training affect sales dollars?



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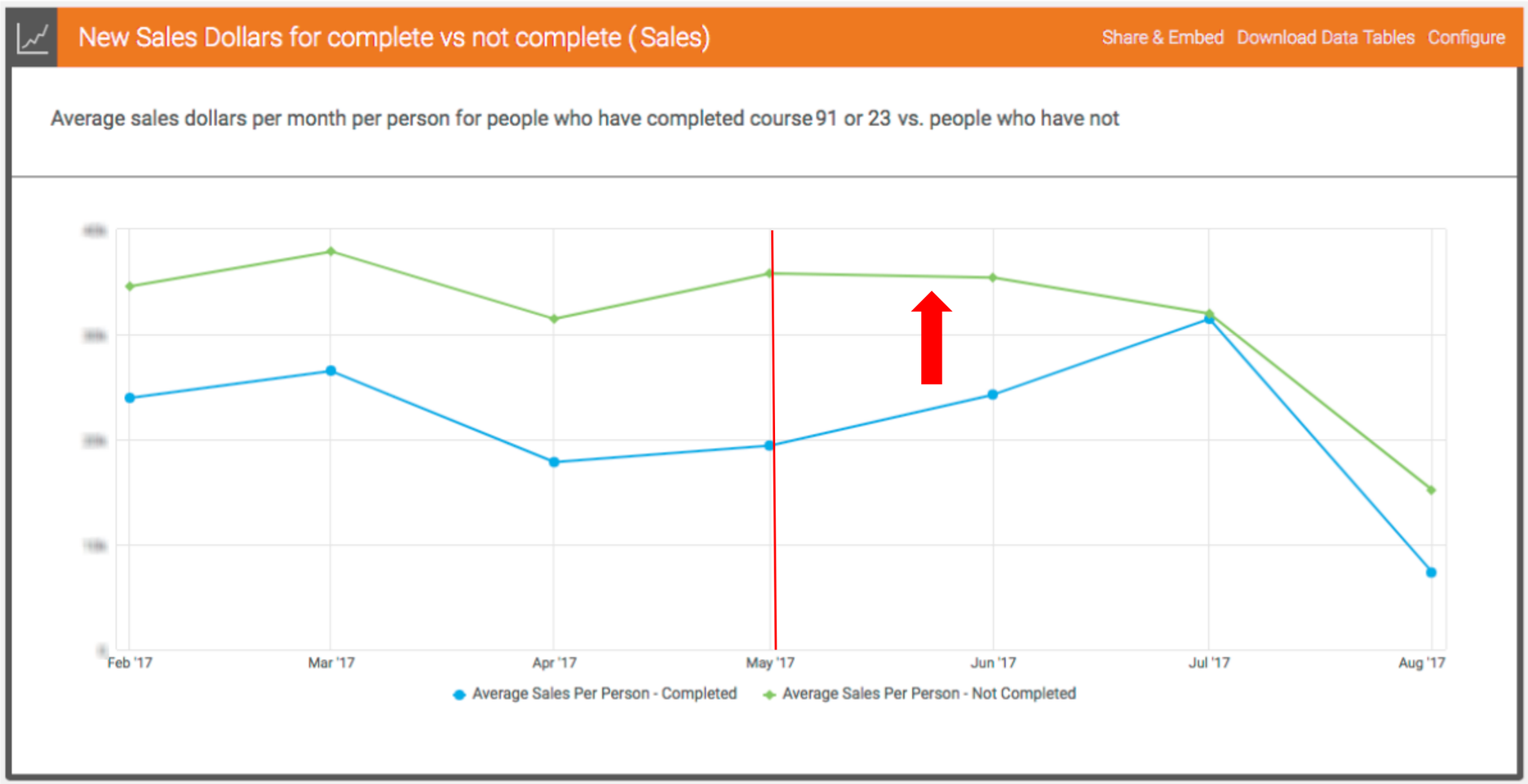


Training completed in May 2017

Your turn.
Tips and tricks to use data.

Keys to using data and data science in learning

1. Understand what learners want to learn.
2. Use data to help them learn.
3. Measure their progress.

1. Understand what they want to learn.

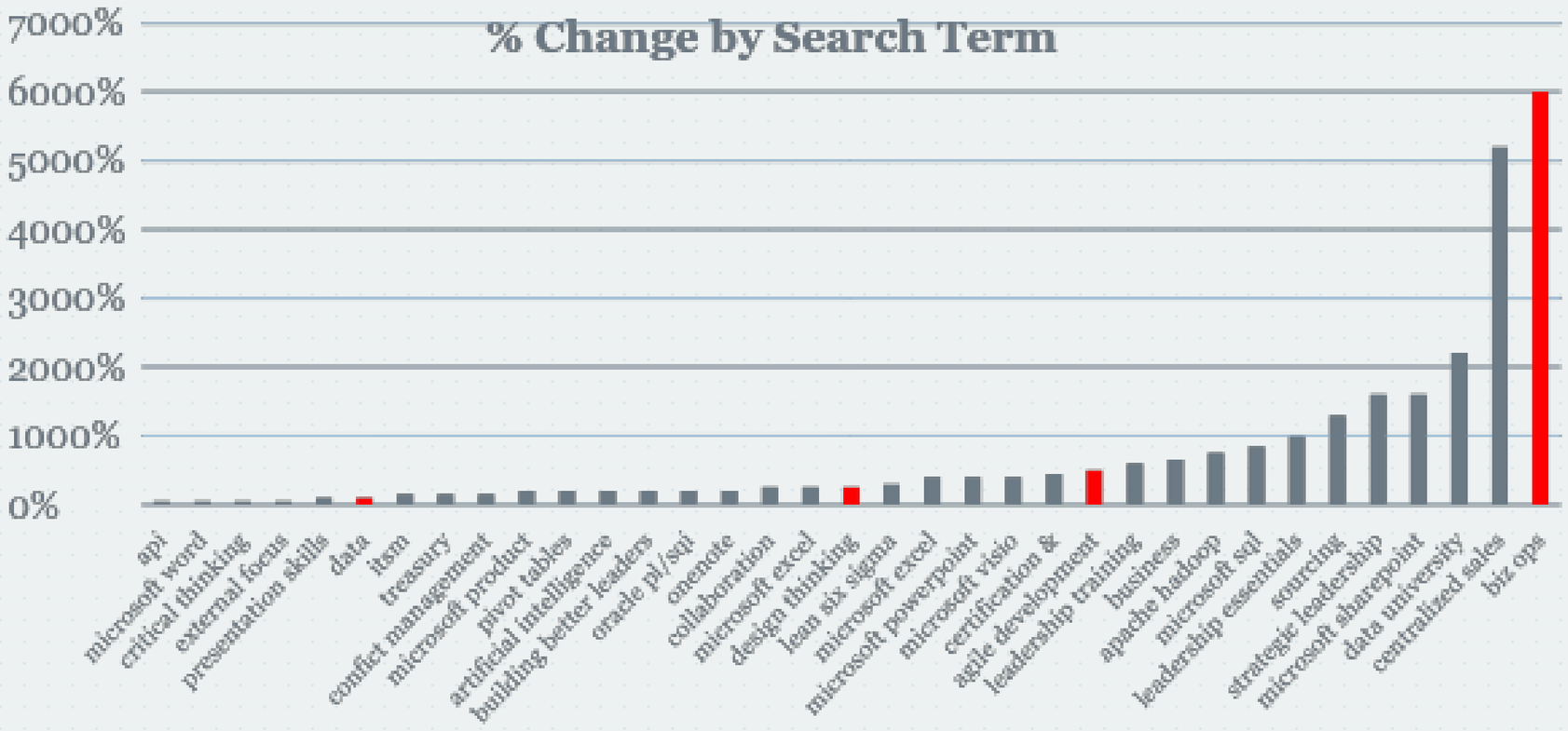
You can ask them, or infer based on activity and preferences.

1. What do they say they want to learn?
2. What are they actively learning already?

(These two things often do not match!)

Spot opportunities in the data.

EVERYONE TALKS ABOUT DATA, DESIGN THINKING, AND AGILE—BUT ARE WE DOING ENOUGH TO DEVELOP OUR BIZ OPS SKILLS?



2. Help them learn.

Match needs with resources.

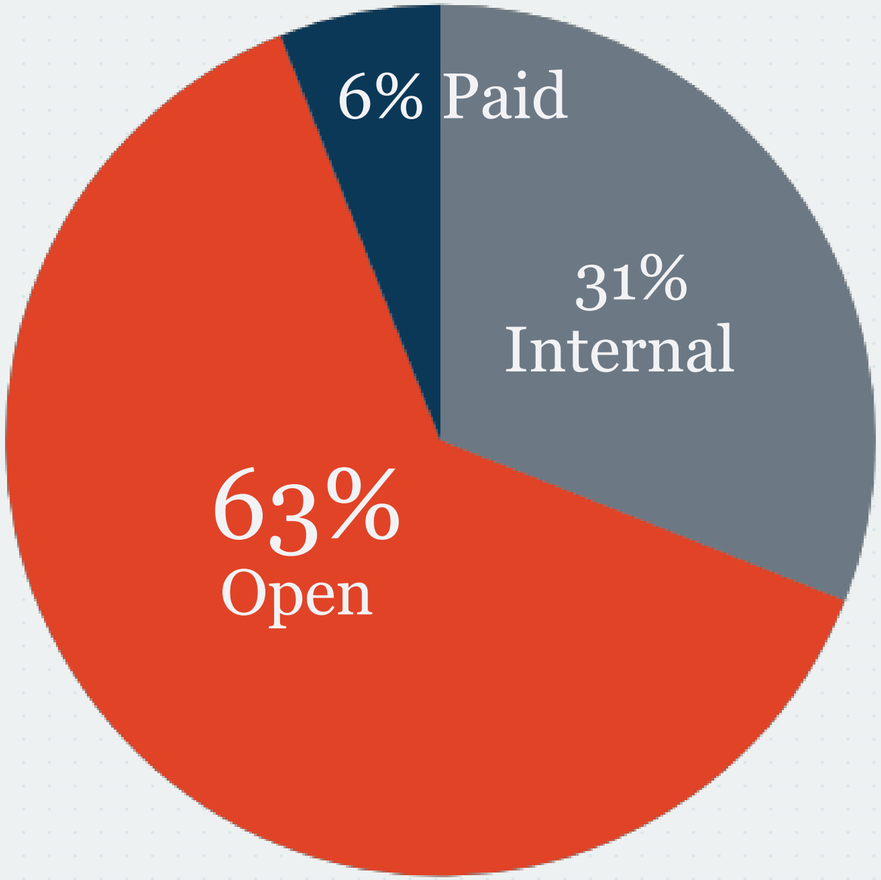
- Intelligent recommendations
- Focus on skills rather than volume of content
- Leverage their network

Identify skills to build.

- Understand their roles (or desired roles) in the organization
- Focus them on skills associated with those roles, then on the content needed

Get them content – from anywhere.

64,107 SOURCES



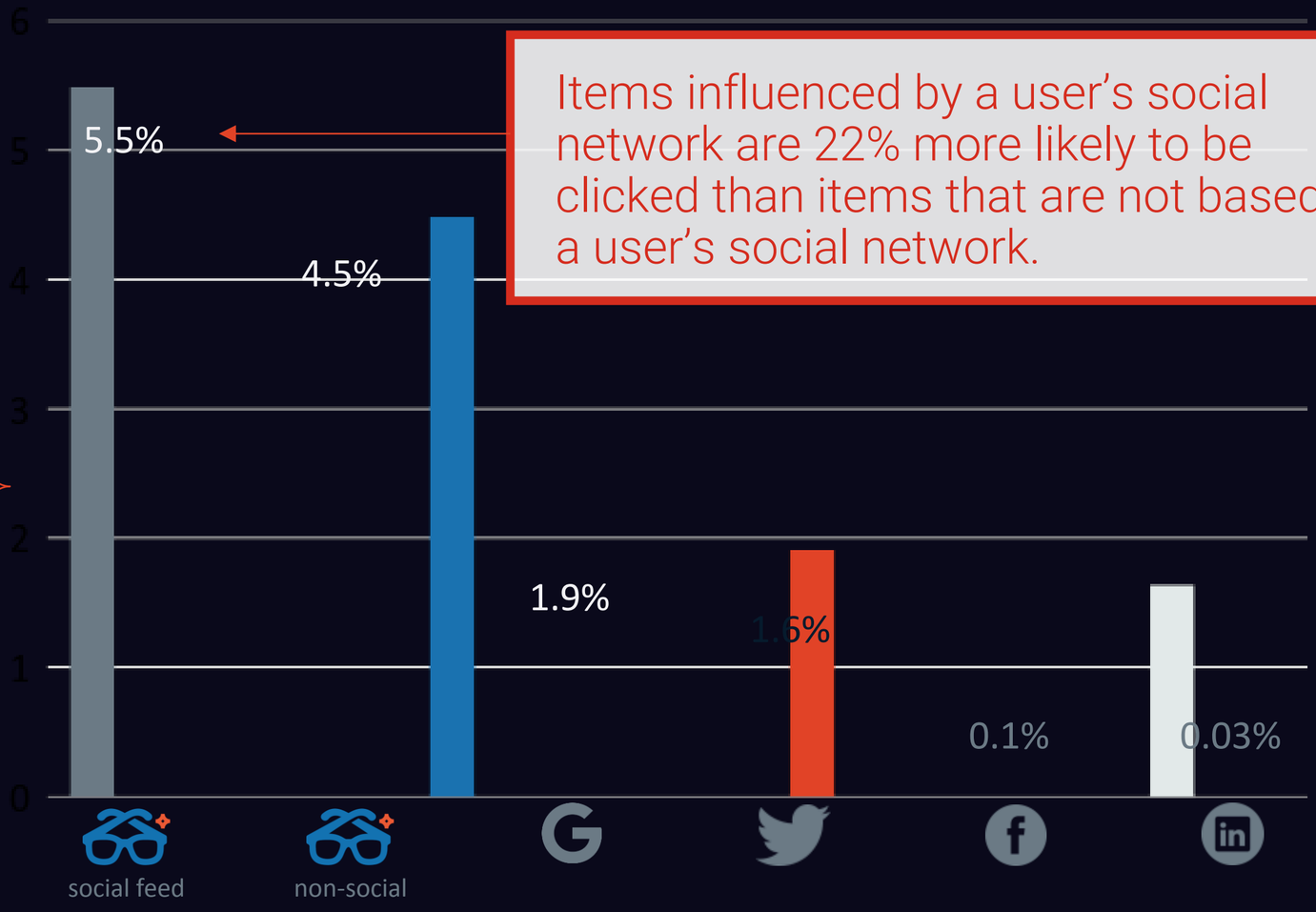
Content completions by provider type

Improve Recommendations

CLICK-THROUGH RATE

YOUR NETWORK'S
Recommendations
Interests
Tags

YOUR GROUPS'
Interests
Related topics



Items influenced by a user's social network are 22% more likely to be clicked than items that are not based on a user's social network.

3. Measure their progress.

Don’t get stuck on the volume of content consumptions.

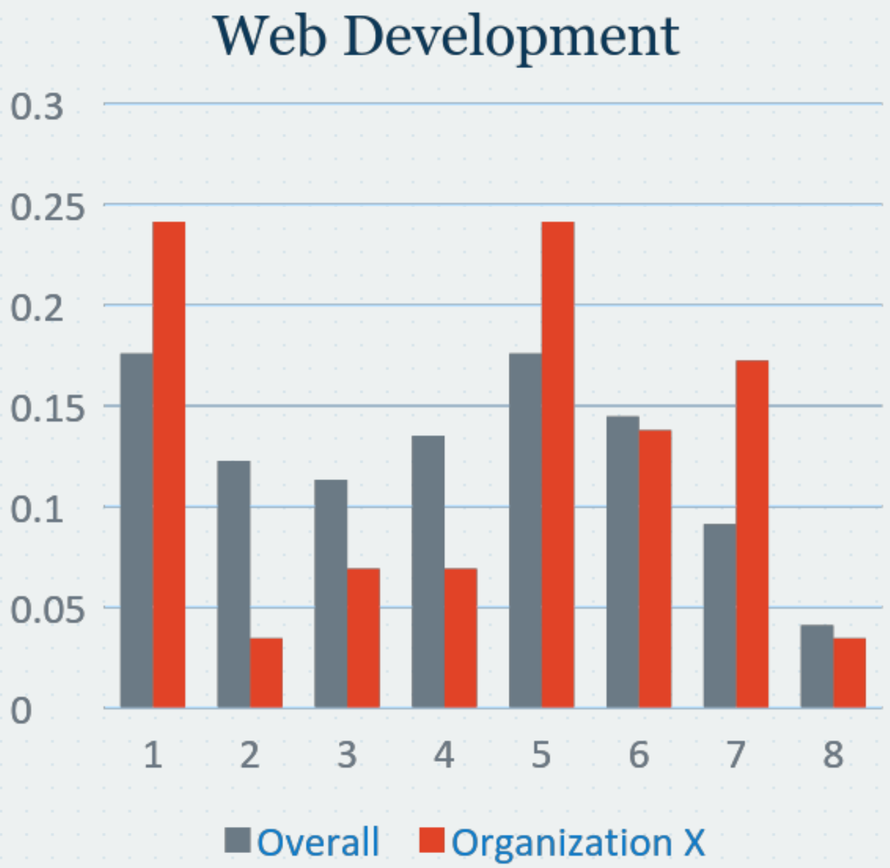
Investigate if learners are…

…Focused on the correct skills

…Improving or making progress over time

…Exhibiting skill gaps or opportunities compared to their peers

Identify Skill Gaps



Learning Data Fluency Cheat Sheet

Know your data

Identify the analytics categories:

- Learning experience
- Learner
- Learning program

Start with measurement

Measurement (start here)
Evaluation
Advanced evaluation
Predictive and Prescriptive

Use your data

- Understand what learners want to learn.
- Look for opportunities in the data.
- Match needs with resources.
- Identify what skills to build.
- Provide options for content access.
- Improve recommendations.
- Measure progress.
- Identify skills gaps.

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